

5 We claim:

1. A nickel-base alloy consisting of in weight percent, about 42 to 58 nickel, about 21 to 28 chromium, about 12 to 18 cobalt, about 4 to 9.5 molybdenum, about 2 to 3.5 aluminum, about 0.05 to 2 titanium, at least one microalloying agent selected from the group consisting of about 0.005 to 0.1 yttrium and about 0.01 to 0.6 zirconium, about 0.01 to 0.15 carbon, about 0 to 0.01 boron, about 0 to 4 iron, about 0 to 1 manganese, about 0 to 1 silicon, about 0 to 1 hafnium, about 0 to 0.4 niobium, about 0 to 0.1 nitrogen, incidental impurities and deoxidizers.

15 2. The nickel-base alloy of claim 1 containing about 8 to 20 weight percent γ' phase.

3. The nickel-base alloy of claim 1 containing less than about 2 weight percent γ'' phase.

20 4. The alloy of claim 1 including about 43 to 57 nickel, about 21.5 to 27 chromium, about 12.5 to 17.5 cobalt and about 4.5 to 9 molybdenum.

25 5. The alloy of claim 1 including about 2.25 to 3.5 aluminum and about 0.06 to 1.6 titanium.

6. The alloy of claim 1 including about 0.01 to 0.5 zirconium, about 0.01 to 0.14 carbon and about 0.0001 to 0.01 boron.

30 7. A nickel-base alloy consisting of in weight percent, about 43 to 57 nickel, about 21.5 to 27 chromium, about 12.5 to 17.5 cobalt, about 4.5 to 9 molybdenum, about 2.25 to 3.5 aluminum, about 0.06 to 1.6 titanium, at least one microalloying agent selected from the group consisting of about 0.01 to 0.08 yttrium and about 0.01 to 0.5 zirconium, about 0.01 to 0.14 carbon, about 0.0001 to 0.01 boron, about 0 to 3 iron, about 0 to 0.8 manganese, about 0.01 to 1 silicon, about 0.01 to 0.8 hafnium, about 0.00001 to 0.08 nitrogen, incidental impurities and deoxidizers.

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5 8. The nickel-base alloy of claim 7 containing about 8 to 20 weight percent γ' phase.

9. The nickel-base alloy of claim 7 containing less than about 2 weight percent γ'' phase.

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10. The alloy of claim 7 including about 44 to 56 nickel, about 22 to 27 chromium, about 13 to 17 cobalt and about 5 to 8.5 molybdenum.

11. The alloy of claim 7 including about 2.5 to 3.5 aluminum and about 0.08 to 1.2 titanium.

12. The alloy of claim 7 including about 0.02 to 0.5 zirconium, about 0.01 to 0.12 carbon and 0.01 to 0.009 boron.

20 13. A nickel-base alloy consisting of in weight percent, about 44 to 50 nickel, about 22 to 27 chromium, about 13 to 17 cobalt, about 5 to 8.5 molybdenum, about 2.5 to 3.5 aluminum, about 0.08 to 1.2 titanium, about 0.01 to 0.07 yttrium, about 0.02 to 0.5 zirconium, about 0.01 to 0.12 carbon, about 0.001 to 0.009 boron, about 0.1 to 2.5 iron, about 0 to 0.6 manganese, about 0.02 to 0.5 silicon, about 0 to 0.7 hafnium, about 0.0001 to 0.05 nitrogen, incidental impurities and deoxidizers.

25 14. The nickel-base alloy of claim 13 containing about 8 to 20 weight percent γ' phase.

30 15. The nickel-base alloy of claim 13 containing less than about 2 weight percent γ'' phase.

16. The alloy of claim 13 including about 45 to 55 nickel, about 22 to 26 chromium, about 14 to 16 cobalt and 5 to 8 molybdenum.

35 17. The alloy of claim 13 including about 2.75 to 3.5 aluminum and about 0.1 to 1 titanium.

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5b
D3

5b
B3

5b
D4

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18. The alloy of claim 13 including about 0.01 to 0.06 yttrium, about 0.02 to 0.4 zirconium, about 0.02 to 0.1 carbon and about 0.003 to 0.008 boron.

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19. The nickel base alloy of claim 13 containing about 2.75 to 3.5 aluminum, about 0.003 to 0.008 boron, about 0.02 to 0.1 carbon, about 14 to 16 cobalt, about 22 to 26 chromium, about 0.5 to 2 iron, about 0 to 0.5 hafnium, about 5 to 8 molybdenum, about 0.01 to 0.05 nitrogen, about 0 to 0.2 niobium, about 45 to 55 nickel, about 0.05 to 0.4 silicon, about 0.1 to 1 titanium, about 0.01 to 0.06 yttrium and about 0.02 to 0.4 zirconium.

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